High Frequency Ceramic Solutions

2.45 GHz High Gain SMD Chip Antenna — P/N 2450AT45A100

Detail Specification: 4/5/2021

General Specifications	
Part Number	2450AT45A100
Frequency Range (MHz)	2400 - 2500
Input Power	3W max. (CW)
Impedance	50 Ω
Operating Temp	-40°C to +125°C
Recommended Storage Conditions and Period for unused Product on T&R	+5 to +35°C Humidity 45 - 75% RH 18 months max.
Reel Quantity (pcs/reel)	1,000
Peak Gain Based on Orientation	
Mounting Considerations 1: "Vertical Orientation" (Page 2)	2.2 dBi typ. (XZ-V)
Mounting Considerations 2: "Horizontal Orientation Type A" (Pages 5)	1.5 dBi typ. (XZ-V)
Mounting Considerations 3: "Horizontal Orientation Type B" (Pages 8)	1.3 dBi typ. (XZ-V)

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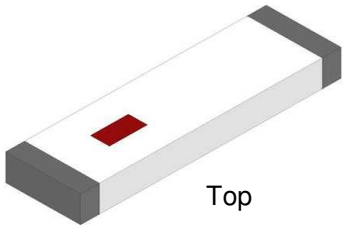
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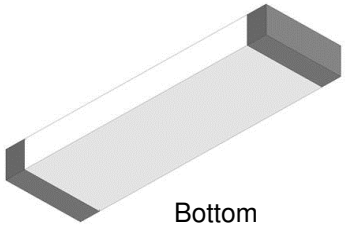
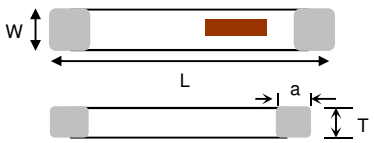

Bottom

Part Number Explanation				
P/N Suffix	**Packing Style**	Bulk (loose pcs.)	Suffix = S	e.g. 2450AT45A100S
		T & R	Suffix = E	e.g. 2450AT45A100E
		100% Tin	Suffix = None	e.g. 2450AT45A100(E or S)
	Evaluation Boards (1-port SMA antenna test boards, pre-tuned)	2450AT45A100-EB1SMA (Page 2)		
		2450AT45A100-EB2SMA (Page 5)		
		2450AT45A100-EB3SMA (Page 8)		

Mechanical Specifications		
	In	**mm**
L	0.374 ± 0.008	9.50 ± 0.20
W	0.079 ± 0.008	2.00 ± 0.20
T	0.047 +.004/-.008	1.20 +0.1/-0.2
a	0.020 ± 0.012	0.50 ± 0.30



Terminal Configuration	
No	**Function**
1	Feeding Point
2	NC

Johanson Technology, Inc. reserves the right to make design changes without notice.
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JOHANSON TECHNOLOGY
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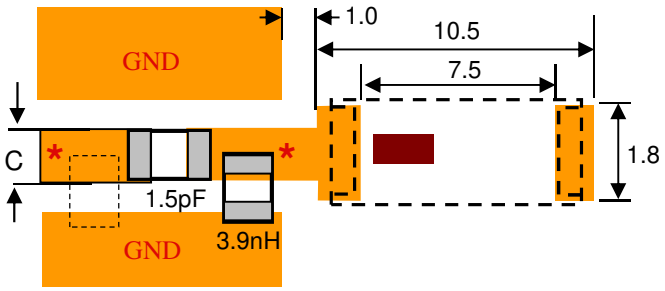
4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

Typical Electrical Specs for "Vertical Orientation" (T=25°C)			
Frequency Range	2400 - 2500 MHz	**Peak Gain**	2.2 dBi typ. (XZ-V)
Return Loss	9.5 dB min.	**Average Gain**	1.0 dBi typ. (XZ-V)

Mounting Considerations 1: "Vertical Orientation"

Mount these devices with brown mark facing up.

*Line width should be designed to provide 50Ω impedance matching characteristics.



Units in mm

"C" Dimension will depend on the width of the trace required for it to have a 50ohm characteristic impedance (i.e. coplanar waveguide theory)

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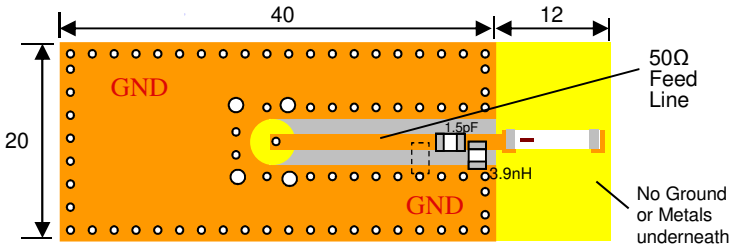
Orderable Evaluation board: p/n: 2450AT45A100-EB1SMA

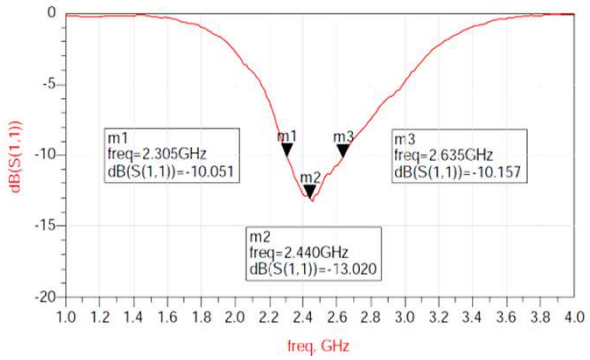


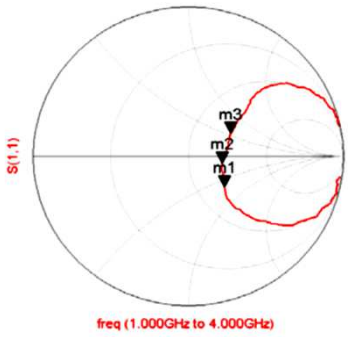
Note: It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values above are used when antenna is mounted on Johanson's evaluation board. The matching values on client's PCB will be different, go to: https://www.johansontechnology.com/tuning and see how to obtain the new values. If you need further help, contact our RF Applications Eng Team at: https://www.johansontechnology.com/ask-a-question

Typical Electrical Characteristics for "Vertical Orientation" (T=25°C)

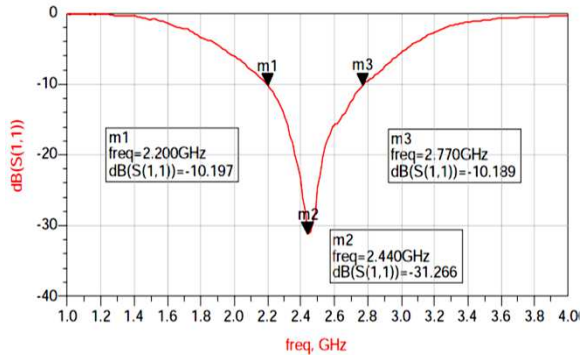
Return Loss

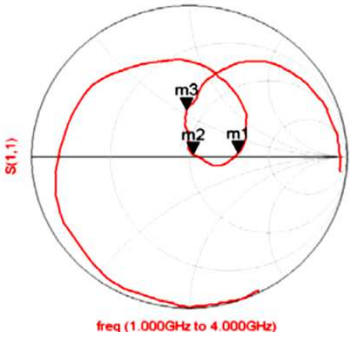
a) Without a Matching Circuit



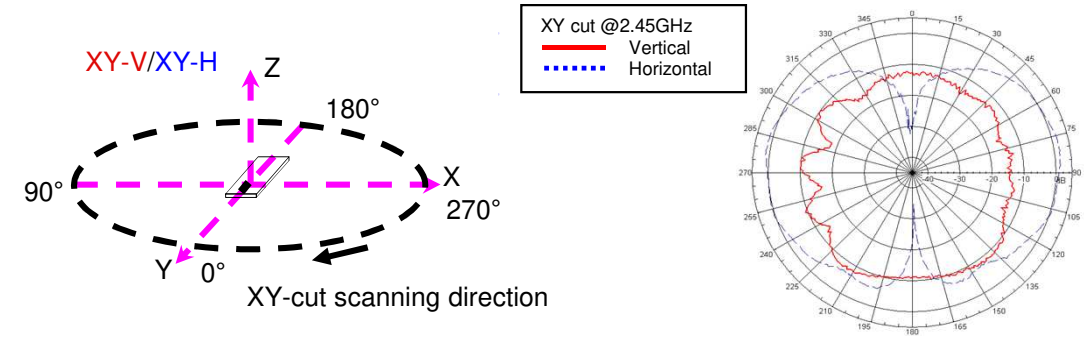


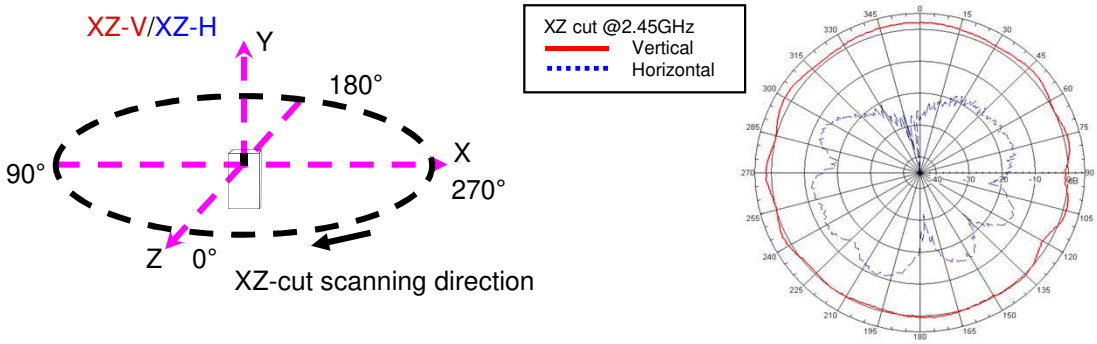
b) With a Matching Circuit

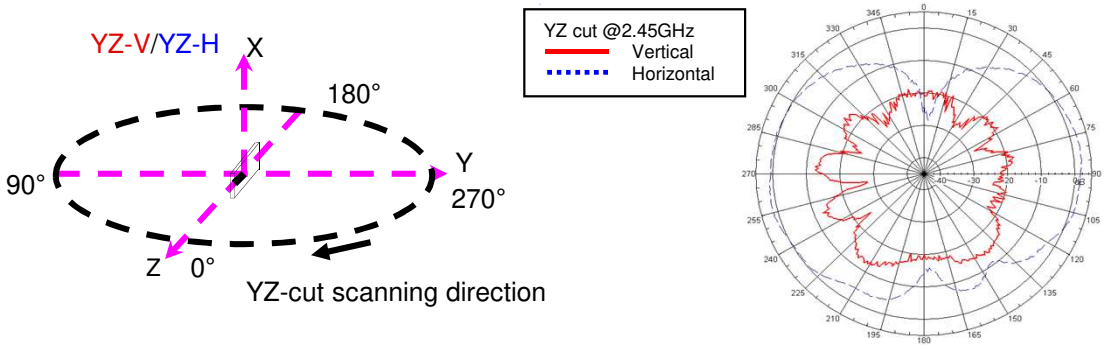




Typical Radiation Patterns for "Vertical Orientation" (T=25°C)





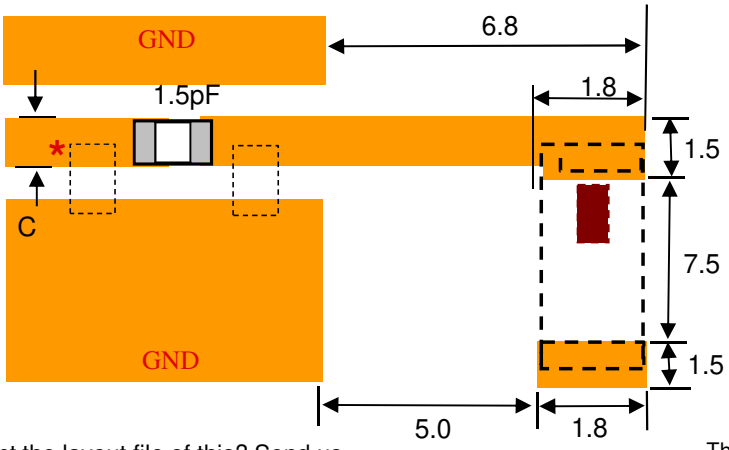


Typical Electrical Specs for "Horizontal Orientation Type A" (T=25°C)			
Frequency Range	2400 - 2500 MHz	**Peak Gain**	1.5 dBi typ. (XZ-V)
Return Loss	9.5 dB min.	**Average Gain**	0.0 dBi typ. (XZ-V)

Mounting Considerations 2: "Horizontal Orientation Type A"

Mount these devices with brown mark facing up.

*Line width should be designed to provide 50Ω impedance matching characteristics.



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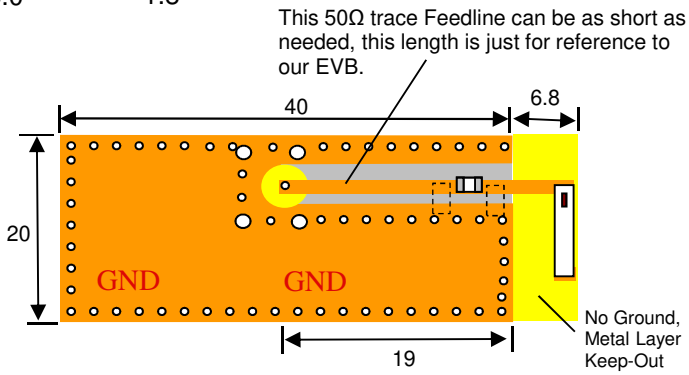
Orderable Evaluation board: p/n: 2450AT45A100-EB2SMA



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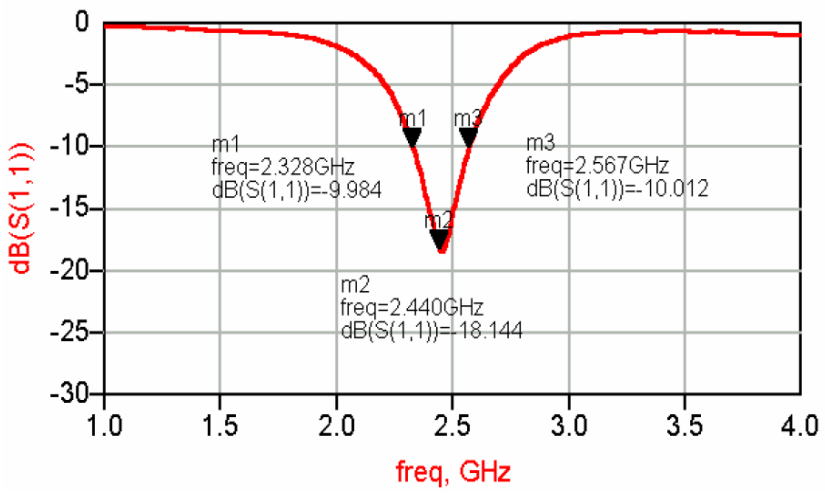
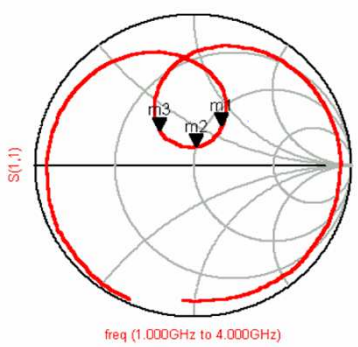
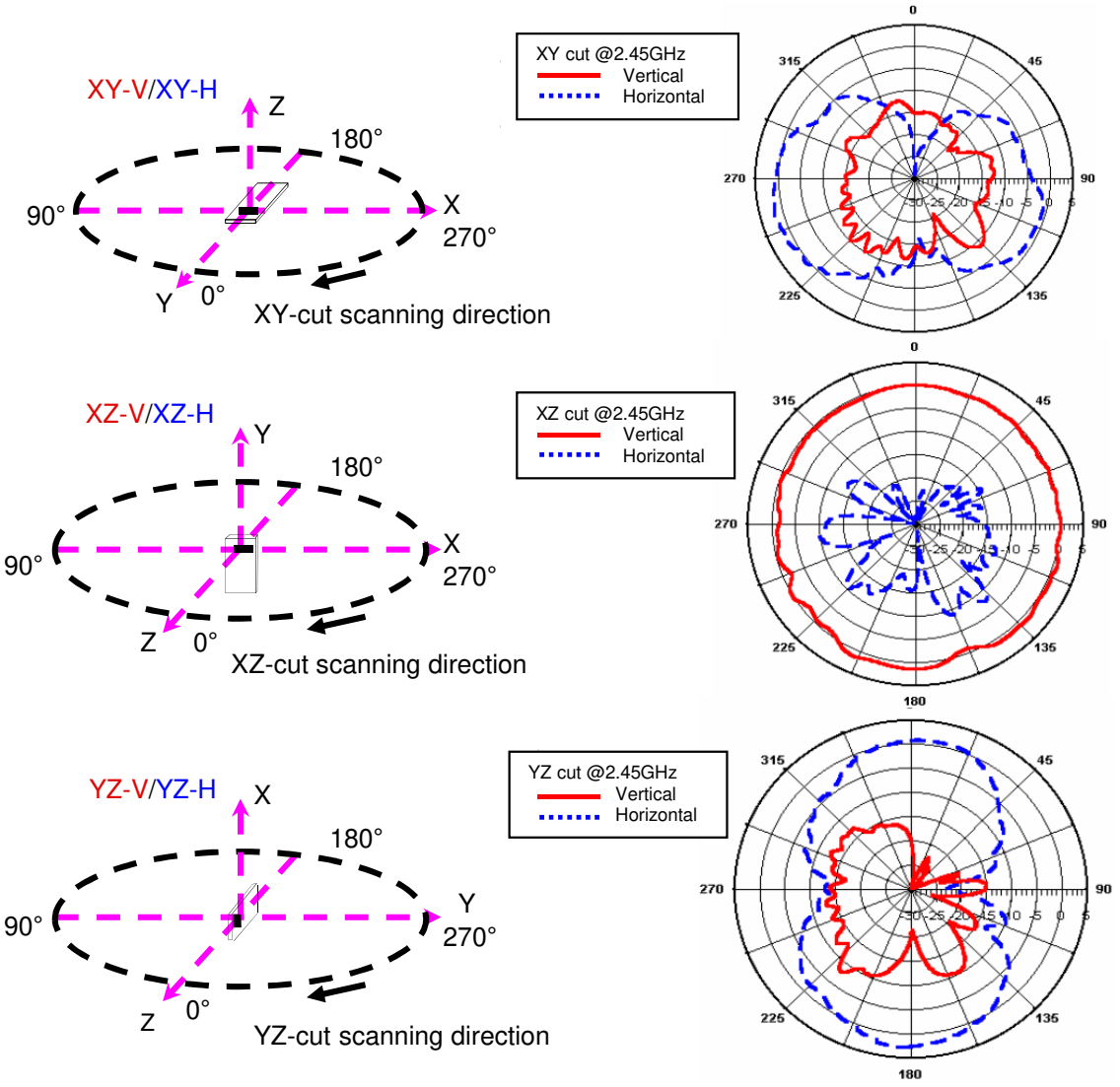
Typical Electrical Characteristics for "Horizontal Orientation Type A" (T=25°C)

Return Loss





Typical Radiation Patterns for "Horizontal Orientation Type A" (T=25°C)



Typical Electrical Specs for "Horizontal Orientation Type B" (T=25°C)			
Frequency Range	2400 - 2500 MHz	**Peak Gain**	1.3 dBi typ. (XZ-V)
Return Loss	9.5 dB min.	**Average Gain**	0.6 dBi typ. (XZ-V)

Mounting Considerations 3: "Horizontal Orientation Type B"

Mount these devices with brown mark facing up.

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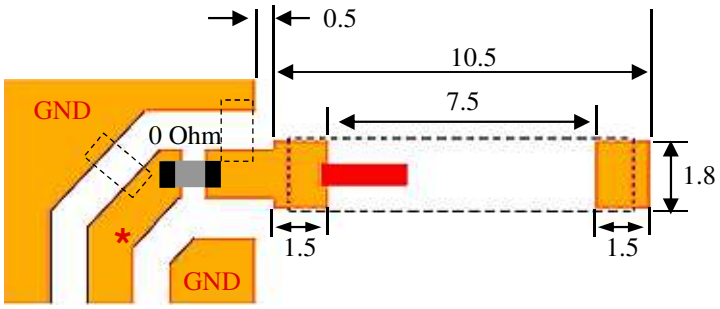

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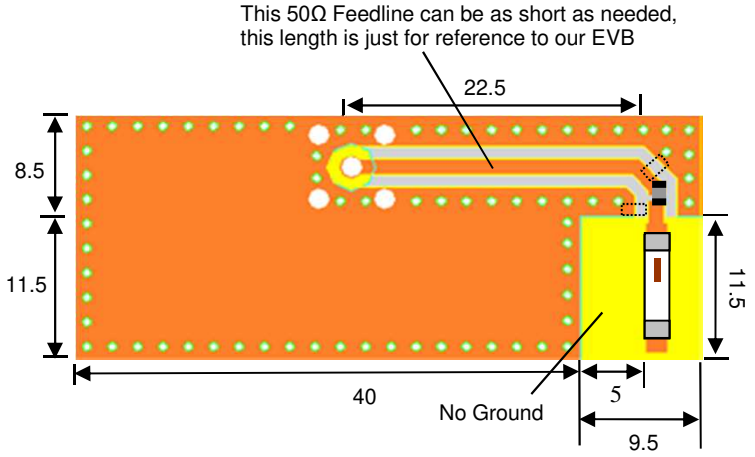

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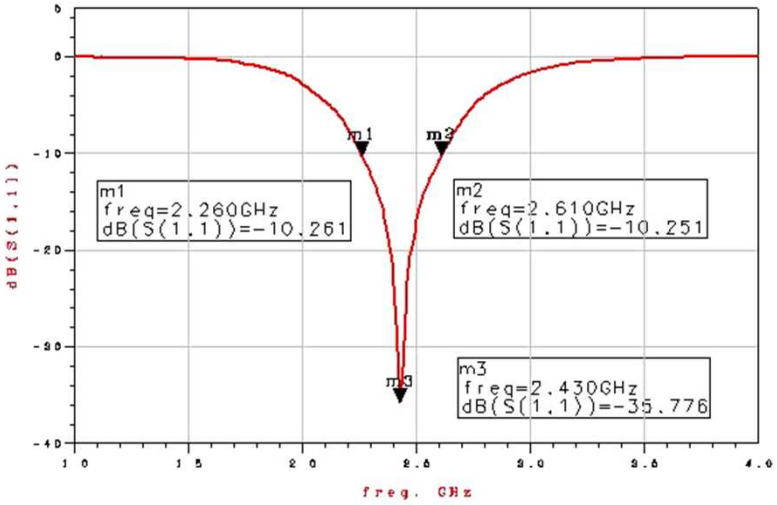
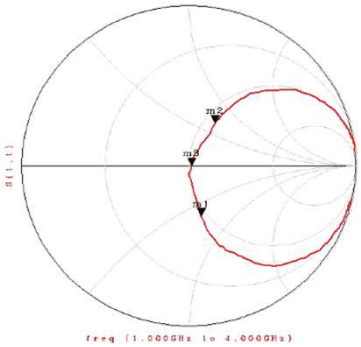
Typical Electrical Characteristics for "Horizontal Orientation Type B" (T=25°C)

Return Loss





Typical Radiation Patterns for "Horizontal Orientation Type B" (T=25°C)